CLAIMS

1. An engine for generating mechanical energy which is capable of changing the physical state of fluid or solid of low boiling temperature or their mixtures into the gas state extremely quickly so as to generate mechanical energy, comprising:

at least a chamber or a bulb which contacts a heat source of high temperature to supply the heat energy to fluid or solid of low boiling temperature in order for them to obtain a high temperature and pressure in said chamber or bulb that is called the primary heating chamber and a heat supplying source is called the primary heat supplying source,

at least one other chamber which is called a secondary heating chamber and a heat source which contacts this chamber so as to supply heat energy to fluid or solid of low boiling temperature when they are contained in said chamber, the heat source is called the secondary heat supplying source, in which at least a formed hole is communicated with a duct, this duct is connected to said primary heating chamber so that the fluid or solid heated of low boiling temperature passes through the hole to said secondary heating chamber, in which a pressure sensor or an elastic screen or a piston located in a cylinder is provided, the piston or screen is moved under the pressure varied in said secondary heating chamber, at least a discharge valve is provided on a wall of said chamber, heated gas with a high pressure from the primary chamber after being introduced in secondary chamber is heated again to a high enough pressure, the sensor receives and outputs a signal to open the discharge valve or to move the screen or the piston and also causes the discharge valve to open, the fluid or solid of low boiling temperature and a very high temperature suddenly escapes via a hole in the discharge valve in order to enter into an other chamber in which the pressure is so much lower in comparison with that at which they have just been discharged, and

at least a chamber into which the fluid or solid of low boiling temperature with a high temperature is discharged, in said chamber the fluid or solid will quickly change its physical state and generate mechanical energy, said chamber is called a physical state changing chamber for fluid or solid of low boiling temperature.

2. An engine for generating mechanical energy according to claim 1, wherein said secondary heating chamber containing fluid or solid of low boiling temperature which is conducted to a hole of said secondary heating chamber in every batch, said hole is closed while the fluid or solid of low boiling temperature is heated, or fluid can be interruptedly pumped by a high pressure pump.

3. An engine for generating mechanical energy according to claim 1 or 2, wherein said fluid is water or liquid nitrogen or oxygen and said solid is CO_2 powder.

4. An engine for generating mechanical energy according to any one of claims 1 to 3, wherein said secondary heating chamber is insulated by a foam wall to prevent escape of the heat energy.

5. An engine for generating mechanical energy according to any one of claims 1 to 4, wherein at least a turbine is installed in said physical state changing chamber in which the energy of the change of physical state is changed into energy to rotate the turbine, or at least a piston, a connecting rod and a fly wheel are installed in said chamber so that the energy of the change of physical state is changed into energy to rotate the axle of fly wheel.

6. An engine for generating mechanical energy according to any one of claims 1 to 5, wherein said primary and secondary heat supplying sources used include a heating resistor or an AC coil for generating varied magnetic field by heating the magnetic material of the engine or microwave or laser beam or flame or electric spark, or liquid fluid such as melting metal, melting alkali (melted from the outside).

7. An engine for generating mechanical energy according to any one of claims 1 to 6, wherein the engine comprising:

at least a big piston on top of this, another piston of which the diameter is smaller than that of said big piston is connected, the center axis of the two pistons are parallel, a unit of said two pistons are located in a cylinder which consists of a big cylinder having the inner diameter equal to that of the big piston and a small cylinder connected with a big one so that it can be placed on the inner face of the big cylinder in a position near a small cylinder (called the upper position), a small piston is placed in a small cylinder, when said small piston is in the lower position (called the lower position), said big piston is still placed on the inner face of the big cylinder but said small piston is moved therefrom,

at least a hole is formed on the perimeter surface of the body of the big piston at position near to the end of it, said hole is provided with a passage from the inside of the big piston to the end surface of it, at least one hole for feeding the fluid or solid of low boiling temperature is heated from said secondary heating chamber, when said big piston is in the upper position said hole of the body of said big piston is aligned with that of the body of said big cylinder, when said big piston is removed from the upper position to advance to its lower position the body of the big piston will cover the hole which supplies the fluid or solid of low boiling temperature from said primary heating chamber.

whereby, the fluid or solid of low boiling temperature heated in the primary heating chamber is conducted to a flow rate adjust valve and via the hole of the big cylinder, when said big piston is in the upper position, the hole on the body of the big cylinder is aligned with that of the big piston, the fluid or solid or their mixtures enter via said two holes of said big piston and then flows to a chamber formed by the surface of the big piston, the inner face of the big cylinder, the end surface of the big cylinder and small piston, at this chamber,

the fluid or solid of low boiling temperature is heated in the primary heating chamber contacts the heated wall of cylinder by the primary heat source so that they are heated again, expanded and thus the piston is pushed toward the lower position, when big piston is started to move the hole on the body of the big piston is covered by the body of the big piston, when big piston advances the lower position, said small piston is moved from the inner face of the small cylinder and block of fluid or solid of low boiling temperature in the secondary heating chamber is suddenly discharged via the physical state changing chamber and the inner face of the small cylinder, since its pressure is so much lower than that of the secondary heating chamber, the block is quickly changed from the fluid to solid form or from concentrated vapor to gas form with a high dispersion, the changing of physical state of this block generates mechanical energy, when the block is introduced via the physical state changing chamber to escape into the environment, the pressure in the secondary heating chamber also is decreased and the springs (or fly wheel through connecting rod) push said big piston to the upper position to finish a cycle of the engine, and the next cycle also is operated in the same way.

8. An engine for generating mechanical energy which is capable of changing the physical state from fluid to solid forms or from concentrated vapor to gas form extremely quickly to generate mechanical energy, comprising:

at least a chamber or a bulb which contacts a heat source of high temperature to supply the heat energy to fluid or solid of low boiling temperature so as to obtain a high temperature and pressure in said chamber or bulb, said chamber is called a primary heating chamber and a heat supplying source is called the primary heat supplying source,

at least a cylinder block on which a shaft is disposed in the middle of the center axle of the block and three rectangular slits are formed on the periphery of the body of the cylindrical block and are located parallel to the center axle of the cylindrical block and are deeply disposed in the radial direction of the body of the cylindrical block toward its center axle, three flat plates of which the length and the depth are the same as that of the flat slits, at least a spring is disposed at the lower side of each flat plate to push the flat plates far from the center of the block, said block with installed flat slits and plates is placed in a cylindrical tube of which the length is the same as that of the cylindrical block so that the two outer surfaces of the block are aligned with those of the cylindrical tube, the two cylindrical blocks and the cylindrical tube have the parallel center axles and the external tangent of the cylindrical block contacts the inner face of the cylindrical tube and two outer surfaces of the cylindrical block and cylindrical tube are attached to two flat plates through which the shaft of the tube pierces, the cylindrical block, flat plates, the inside of the tube and the two surfaces of the outer flat plates are cooperated to form chambers of which the volume is variable when the cylindrical block rotates around its axle in the inner face of the tube, and the chambers have the smallest volume when they are near the contacting line between the periphery of the cylindrical block and the inner face of the cylindrical tube and having the greatest volume when

chambers are in the symmetrical position through the center on the contacting line between the block and the tube,

in the cross- section perpendicular to the center axle of the block and the tube is a circular and contact point between the cylindrical block and the tube in the position of 6 o'clock (position of a watch needle) and the opposite position located via the center of the cylindrical block is the position of 12 o'clock, at least one through hole is formed on the body of the tube at the 7 o'clock position for conducting the fluid or solid of low boiling temperature to the chamber with variable volume, on the body of the tube at the 8 o'clock position is disposed a resistance for heating the fluid or solid of low boiling temperature in the chamber of variable volume when it is moved through this position, a hole is formed on the body of the tube from the position of 2 o'clock to 5 o'clock so as to gas is discharged into the environment,

whereby fluid or solid of low boiling temperature heated in secondary heating chamber passes via a hole of the cylinder in the 7 o'clock position to enter into the chamber of variable volume, the impetus of the previous cycle or the external force when starting pushes the chamber to rotate in the clockwise direction (the direction of the clock needle), when the chamber of variable volume moves to the 7 o'clock position, the fluid or solid of low boiling temperature stops going to this chamber, when the chamber moves from the positions of 8 to 9 o'clock, the fluid or solid of low boiling temperature in this chamber is heated and expanded quickly so that the volume of this chamber is increased, when being pushed in the clockwise direction the chamber of variable volume generates mechanical energy to rotate the cylindrical block and its axle, the rotation continues until it can receive the greatest volume in the position of 12 o'clock, after that the rotary impetus causes the chamber of variable volume to move to position from the 2 o'clock to 5 o'clock position, the block of gas in this chamber escapes in the environment and the chamber continues to move to the position of 2 o'clock in order to start a new cycle.

9. An engine for generating mechanical energy according to claim 8, wherein at least one turbine is installed in the hole of the body of the tube so that the gas discharged is changed into the energy to rotate the turbine, or it is possible to install cylinder and piston, connecting rod, and fly wheel in order to change the energy of the process of changing physical state in this chamber into energy for rotating the axle of fly wheel.

10. An engine for generating mechanical energy in which fuel or mixtures containing fuel such as a mixture of alcohol and water and oxidized substance (like the air) can react together when they are in fluid or solid form or they have a heavy density so as to create a high temperature for the reaction and the combustible product is suddenly expanded to generate a great mechanical energy, said engine comprising:

at least a small chamber which receives and contains the fuel of its mixtures called the fuel containing chamber, in which at least a hole is formed for receiving fuel or its mixtures,

at least a small chamber which receives and contains the oxidized substance or its mixture called the oxidized substance containing chamber,

at least a common partition disposed between two chambers on which at least a hole or a space is formed,

a big chamber includes two small chambers and a partition wall which can move so that they obtain the two states: in the first state, the two chambers are separated by the partition wall, and in the second state, the two chambers are communicated by said hole or space on the partition, the volume of the two chambers is or is not variable,

in the position where the two chambers are separated, at least a hole is formed in each chamber so that the fuel or its mixture is received in one chamber and the oxidized substance or its mixture is received in other chamber, after that two holes are closed by the movement of the two chambers or partition relative to the big chamber, the movement is performed by the inertia of the previous cycle or by the external force applied during starting,

two chambers are moved relative to the partition to a position in which a hole or a space is formed so that two holes are communicated with each other, at this position the fuel or its mixture and oxidized substance or its mixture are mixed and reacted together by a high temperature accumulated in the two chambers and partition of the previous cycle or by the heating of spark plug upon starting, After the reaction, the chamber of variable volume reacts and generates the heat so that the products in the two communicated chambers are expanded and generated the mechanical power by which two small chambers are moved in the big chamber in order to obtain the greatest volume, then by means of inertia two small chambers are moved in the big chamber toward the position at which a discharge hole is formed on the body of the big chamber for discharging the reacted products in the atmosphere, while in the chamber of invariable volume, the inertia continues to make two small chambers move in the big chamber to a position where they meet the body of the big chamber having a discharge hole for dispersing the products to the outside, then the products create a reaction force so that the two small chambers move in the big chamber, after the product escapes, the pressure in the chamber will be decreased, by inertia the two chambers move toward the initial position in order to begin a new cycle.

11. An engine for generating mechanical energy according to claim 10, wherein inside the discharge hole of the product is mounted a cone tube of which a small portion is connected with the discharge hole and the big portion is a long tube section so as to react products entered therein and very quickly change the physical state thereof, since the cone tube with a cylinder section is communicated with the atmosphere, the pressure therein is significantly lower than that of the big chamber, the product changes the physical state extremely quickly from fluid, solid, vapor with a thick density to gas form and ejects to form a pushing force for the engine, and this is an explosive jet engine with a partition.

12. An engine for generating mechanical energy according to claim 10, wherein inside the discharge hole for the reacted product is mounted a cone tube of which small portion is connected with the discharge hole and the big portion is a long tube section in which a piston is connected to a connecting rod and fly wheel, or turbine is disposed so that the reacted products discharged therein, the products change the physical state extremely quickly from fluid, solid, vapor with a thick density to gas form, the expansion of the the block of gas applies to the piston or turbine so that this expansion is changed into mechanical power to rotate the fly wheel or turbine, the engine is called an explosive engine with partition and explosive engine with turbine- partition.

13. An engine for generating mechanical energy according to any one of claims 10 to 12, wherein at least fluid substance or solid having a low boiling temperature such as liquid water, liquid nitrogen, or CO_2 solid powder is conducted into the big chamber or cone tube in order to increase the expansive products and at the same time to adjust the temperature of engine.

14. An engine for generating mechanical energy according to any one of claims 10 to 13, wherein fluid or solid having the low boiling temperature such as liquid water, liquid nitrogen, or CO_2 solid powder is heated in the outer primary heating chamber.

15. An engine for generating mechanical energy according to any one of claims 10 to 14, wherein the outer case of the engine is coated by a layer of insulation foam in order to limit the escape of the heat energy of engine.

16. An engine for generating mechanical energy according to any one of claims 10 to 15, wherein an explosive jet engine of piston partition type includes:

at least two small chambers formed by a common partition are disposed in the top of a big piston of cylinder shape, the direction of the partition is parallel to the center axle of the big piston which is installed with the partition in a big cylinder of which the diameter is the same as that of the big piston, when the big piston at the position of the top of the big cylinder, the big piston, a common partition and the top cross section of the big cylinder form two separated chambers, where the first small chamber receives fuel or its mixture from a hole on the body of the big cylinder or a valve located on the top side of the big cylinder, the second small chamber receives oxidized substance or its mixture from a hole on the body of the big cylinder or from a valve located at the top side of the big cylinder, after two chambers receive fuel and substances and their mixtures, two holes are covered by the movement of the big piston to the bottom of the big cylinder (by the inertia of the two previous cycles or the affection of force when starting) and two holes supplying fuel or oxidized substance or its mixture and the two valves at the top side of the big cylinder are closed by the movement of the two chambers via driving structure incorporated in the movement of the big piston, the movement of the two chambers also gives a space communicated therebetween so that the fuel and oxidized substance or

its mixture are mixed together to react suddenly by the high temperature accumulated in the piston-cylinder from the previous cycle or a heated spark plug, the temperature of the reaction makes the volume in big common chamber expand and push the big and small pistons to move at the bottom position of the big cylinder, at which a discharge hole is disposed on the body of the cylinder, a common chamber has a high temperature so that the temperature is transmitted to the next chamber, in the next chamber there is a tube connected to a discharge hole on the body of the big cylinder, in the next chamber these substances are changed extremely quickly into gas and ejected in order to create an reaction force of propulsion for the engine, the next chamber is called chamber of changing the physical state, when the block escapes in the chamber of change of physical state, the pressure in the big common chamber is decreased, the piston continues to move to the top side of the cylinder by the inertia thereof and starts the next cycle.

17. An engine for generating mechanical energy according to claim 16, wherein a small piston of which the diameter is smaller than that of the big piston is disposed between two partitions on the top of the big piston and is joined to the big piston, and its direction is parallel to the center axle of the big cylinder and its length is greater that that of a common partition,

disposed on the top of the big cylinder is a small cylinder connected to the top of the big cylinder, its direction is parallel to that of the big cylinder and placed in the position so that when the big piston is at the top of the big cylinder, the small piston is in the inner face of the small cylinder,

when a big piston is at the top of the cylinder, the big piston, partition, and the inner face of the big cylinder form two separate chambers,

when the big piston is at the bottom position of the big cylinder, the top of the big piston, the inner face of and the top of the big cylinder form a common chamber, that means two small cylinders are communicated and small piston is moved away from the small cylinder.

when the big piston is at the upper position, the first chamber receives fuel or its mixture through a hole on the body of the big cylinder or a valve on the top of the big cylinder, the second chamber receives oxidized substance or its mixture through a hole on the body of the big cylinder or a valve on the top of the big cylinder, then two holes are closed by the movement of the big piston to the bottom of the big cylinder and the body of the big piston covers the two holes for supplying fuel to the body of the big cylinder or two valves on the top of the big cylinder are also closed by the movement of the two chambers via driving structure combined with the movement of the big piston,

two chambers are slowly moved to the bottom position of the big cylinder, on a common partition there is a space between the two chambers, so fuel or its mixture and oxidized substance or its mixture is suddenly reacted by the temperature accumulated in the piston- cylinder from the previous cycle or the heated spark plug when starting, the temperature of the reaction makes the volume in the big common chamber expand and push the big piston to the bottom position of the big cylinder, here the small piston is moved away from

the inner face of the small cylinder, in this position substances meet at a discharge hole in the inner face of the small cylinder and they escape into the next chamber which is a cylindrical tube installed on the outer surface of the small cylinder, in the next chamber these substances are changed into gas and are ejected in order to create a reaction force of propulsion for the engine of the next chamber, the next chamber is called chamber of transfer of physical state, when the substances escape into the chamber of transfer of physical state, the pressure in the common chamber is decreased, the piston continues to move to the top side of the cylinder by the inertia and starts a new cycle.

18. An engine for generating mechanical energy according to any one of claims 9 to 15, further comprising:

at least two similar portions in which the first portion is used to receive and hold fuel or its mixtures, the second portion is used to receive and hold an oxidized substance or its mixture,

a small cylindrical block on which a shaft is disposed in the middle of its center, at least four flat rectangular slits of which the length is the same as that of the small cylindrical block and the direction of these slits is parallel to the center axle of the cylindrical block, placed in the flat slits are flat rectangular plates of which length, width, and depth are approximate to those of flat rectangular slits, at least a spring is located in the bottom of each flat plate to radially push the flat plate far away,

a big cylindrical tube of which the diameter and length is either greater or the same as that of the small cylindrical block, respectively,

a cylindrical block with flat plates installed in flat slits put in the inner face of the big cylindrical tube so that the cylindrical block is aligned with the big cylindrical tube and their center axle is parallel to one other.

two portions are abutted against a common partition so that their two circular sections are aligned, and the two outer surfaces are closely installed by two flat plates, a shaft goes through these two flat plates, the cylindrical block, partition, and the two long pins are provided on the shaft so that the big cylindrical blocks are rotated synchronically,

the cylindrical block, flat plates, the inner face of the big cylindrical tube and two flat plates are incorporated into chambers having a variable volume, the volume of the chambers become the smallest when the chambers are near the tangent of the cylindrical block and the inner face of the big cylindrical tube, the volume becomes the greatest when the chambers are in symmetrical position through the center the cylindrical block and the tangent.

at the cross section perpendicular to the center of the cylindrical block and cylindrical tube, the contact point between the cylindrical block and cylindrical tube is the position of 6 o'clock (according to the position of needles on a watch), the opposite position on the inner face of the big cylindrical tube is the position of 12 o'clock,

in cross section of the cylindrical tube at the 8 o'clock position, on the body of the first portion there is a hole for receiving fuel or its mixture, on the body of the second portion there is a hole for receiving oxidized substance or its

mixture, on a common partition at the position of 10 o'clock there is a hole or a space, in a position from 11 o'clock to 12 o'clock, on the body of the big cylindrical tube of the two portions are two gas discharge holes, to which is/are attached one or two cylindrical tube(s) or a funnel-shaped tube (s) so that the direction of the tube(s) is parallel to the tangent of a circular surface of the big cylindrical tube in counterclockwise direction, on the body of the big cylindrical tube there are at least two flat holes extending from the position of 2 o'clock to 5 o'clock in order to allow the excess gas to escape,

whereby, when two portions have two chambers of variable volume are simultaneously in the position of 6 o'clock, the block of the cylindrical tube rotates in the clockwise or counterclockwise directions (if the members of the engine are designed vice-versa) (the block of the cylindrical tube is rotated by the inertia of the previous cycle or the external force affected when starting) and the volume of the chamber of variable volume is increased, when the small cylindrical block is moved to the 8 o'clock position, the chamber of variable volume on the first portion receives fuel or its mixture through a hole on the body of the cylindrical tube in 8 o'clock position, the small cylindrical block continuously rotates to push the chamber toward position of 10 o'clock in order to meet a communicative hole or a space on a common partition, in this position, fuel or its mixture and oxidized substance or its mixture of the two chambers react and generate heat and thereby volume of the chamber of variable volume is increased, at the same time the chamber of variable volume is push toward position of 11 o'clock, in this position, the products in the two chambers of variable volume are discharged in order to put the chamber toward position of 2 o'clock, in which the excess gas with low pressure is not fully discharged and the chamber is continuously to position of 6 o'clock and the next cycle is stated, the products discharged in discharge hole or cylindrical tube are very quickly changed the physical state thereof, where the pressure is lower than that of the chamber of variable volume when it is in the positions from 11 o'clock to 12 o'clock, after the expansion, they are ejected in the outer environment in order to generate jet force for the engine.

19. An engine for generating mechanical energy according to claim 18, wherein the fuel or its mixture and oxidized substance or its mixture are heated in order to obtain a high temperature and a high pressure from the outer of the engine before conducted to the chambers of variable volume of the engine.

20. An engine for generating mechanical energy according to any one of claims 9 to 15 further comprising:

at least two similar portions in which the first portion used to receive and hold fuel or its mixture, the second portion used to receive and hold oxidized substance or its mixture, each of portions including:

a small cylindrical block on which there is a shaft in the middle of its center, on the perimeter of the block are formed four flat rectangular slits of which length is the same as that of the small cylindrical block and the direction of slits is parallel with the center axle of the cylindrical block, in flat slits are

placed flat rectangular plates of which length, width, and depth are approximate to those of flat rectangular slits, at the bottom of each flat plates are disposed the springs to radially push the flat plates away from,

a big cylindrical tube of which diameter and length is greater than and is the same as those of the cylindrical block, respectively,

the cylindrical block with flat slits installed by flat plates is put in the inner face of big cylindrical tube so that the cylindrical block is aligned with the big cylindrical tube and their center axle is parallel with one other,

two portions are abutted against a common partition so that two circular cross sections are aligned, and two outer cross sections are closely installed by two flat plates, a shaft is pierced through two flat plates, the cylindrical block, partition, two long pins are provided on the shaft to synchronically rotate the big cylindrical blocks,

consequently, the cylindrical block, flat plates, the inner face of big cylindrical tube and two external planes are incorporated into a chamber having a variable volume, the volume of the chambers become the smallest when the chambers are near the tangent of the cylindrical block and the inner face of big cylindrical tube, the volume becomes the greatest when the chambers are symmetrical position through the center the cylindrical block and the tangent,

in cross section perpendicular with the center the cylindrical block and cylindrical tube, the contact point between the cylindrical block and cylindrical tube is called a position of 6 o'clock (according to the positions of needles on a watch), the opposite position in the inner face of the big cylindrical tube is position of 12 o'clock,

in cross section on big cylindrical tube of 7 o'clock position, on the body of the big cylindrical tube of the first portion there is a hole for receiving fuel or its mixture, on the body of the second portion there is a hole for receiving oxidized substance or its mixture, on a common partition of 8 o'clock position there is a hole or a space, in the positions from 1 o'clock to 5 o'clock, on the body of big cylindrical tube of the two portions are formed two gas discharge holes so that gas is discharged in the atmosphere after it is expanded in the chamber of variable volume.

whereby, when two portions having two chambers of variable volume is simultaneously in the position of 6 o'clock, the block of the cylindrical tube rotates in the clockwise or counterclockwise directions if the members of the engine designed vice-versa (block of the cylindrical tube is rotated by the inertia of the previous cycle or the external force affected when starting) and the volume of the chamber of variable volume is increased, when the small cylindrical block is moved to 7 o'clock position, the chamber of variable volume on the first portion receives fuel or its mixture through a hole on the body of the cylindrical tube in 7 o'clock position, the small cylindrical block is continuously rotates to push the chamber toward 8 o'clock position in order to meet a communicative hole or a space on a common partition, in this position the fuel or its mixture and oxidized substance or its mixture of the two chambers react and generate heat and the volume of the chamber of variable volume is expanded, at the same time the chamber of variable volume is pushed toward

position of 12 o'clock of the greatest volume, the process of expansion of the volume of chamber from 8 o'clock position to 12 o'clock of engine generates mechanical power, after that the cylindrical is continuously rotated to position of 1 o'clock in order to meet an discharge hole on the body of big cylindrical tube, the hole is extended from position of 1 o'clock to 5 o'clock, the excess products is completely discharged and the chamber of variable volume is moved go to position of 6 o'clock in order to start next cycle.